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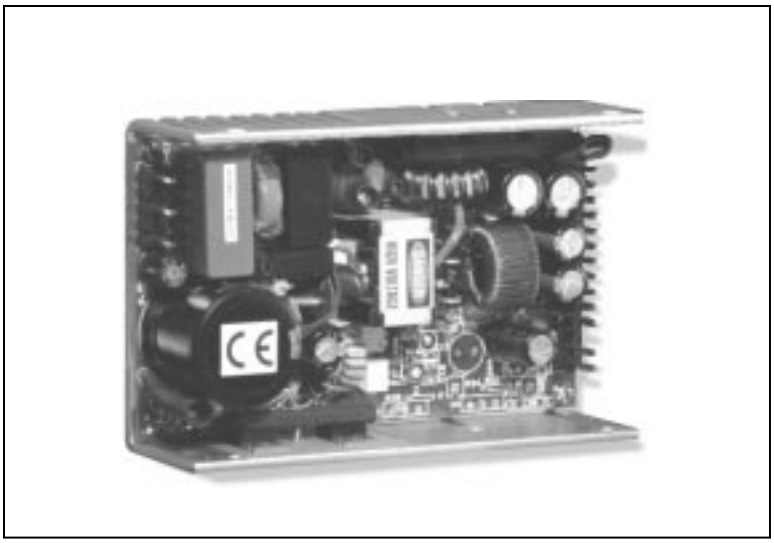
Jameco Part Number 208750

Digital Power
Powering Your Technologies

US100 Series Universal Input 100 Watt Switchers

- 75% typical efficiency
- EN55022-A conducted
- Up to 4 outputs
- Compact 5.0" x 3.3" x 1.5" size
- UL, cUL, TUV and CE
- Optional cover
- Available with 24Vdc and 48Vdc input
- Available with EN55022-B filtering (US100B Series)
- Available with medical safety approvals (US100M Series)



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The US100 series is one of the industry's smallest 100W switchers. Measuring only 5" x 3.3" x 1.5", this series of tiny giants deliver up to 100W continuous or 120W peak power from one to four outputs. The 90-250Vac universal input allows them to be used worldwide.

The US100 is one of the *flexibility* series. In addition to the models listed on this sheet, many potential models are available that include full safety agency approval and do not require any non-recurring engineering (NRE) charge. Prototype delivery is just a few weeks.

Flexibility options include a cover and adjustable post regulators on V3 and/or V4 outputs. Output voltage options are given in the table below. Fully custom models are also available. Contact the factory for details and for information on EN55022-B filtering, medical approval and power fail/power good detect.

US100 models are also available with 24Vdc or 48Vdc inputs. Please see the DP100 Series data sheet for details.

Specifications are subject to change without prior notice.

Available Models

Standard Model Number	EN55022-B Model Number	Medical Model Number	Output	Output Voltage	Output Current Ratings Min[1]	Max[2]	Max[3] (I_m)	Peak[4]
US100-105	US100B-105	US100M-105	V1	+5V	0.5A	10A	14A	20A
US100-112	US100B-112	US100M-112	V1	+12V	0A	5.8A	8.3A	10A
US100-124	US100B-124	US100M-124	V1	+24V	0A	2.9A	4A	5A
US100-201	US100B-201	US100M-201	V1	+5V	0.5A	8A	14A	16A
			V2	+12V	0A	3A	6A	7A
US100-301	US100B-301	US100M-301	V1	+5V	0.5A	8A	10A	12A
			V2	+12V	0A	3A	6A	7A
			V3	−12V	0A	1A	2A	2.5A
US100-303	US100B-303	US100M-303	V1	+5V	0.5A	8A	10A	12A
			V2	+15V	0A	3A	6A	7A
			V3	−15V	0A	1A	2A	2.5A
US100-383	US100B-383	US100M-383	V1	+3.3V	0.5A	10A	14A	16A
			V2	+5V	0A	4A	6A	7A
			V4[5]	+12V	0A	0.8A	0.8A	2A
US100-401	US100B-401	US100M-401	V1	+5V	0.5A	8A	10A	12A
			V2	+12V	0A	3A	6A	7A
			V3	−12V	0A	1A	2A	2.5A
			V4[5]	−5V	0A	1A	2A	2.5A
Modified standard *flexibility* output options[6]			V1	±2.5 to ±48V[7]		10A	15A	
			V2	±2 to ±48V[8]		4A	6A	
			V3	±2 to ±48V[8]		1A	2A	
			V4[5]	±2 to ±48V[8]		1A	2A	

Notes:
[1] At least 20% of maximum output current (I_m) is required to maintain stated regulation. Supply remains on at zero load, but regulation is not guaranteed.
[2] Convection cooling, 70W maximum
[3] Forced air cooling, 100W maximum
[4] Peak output, 30 sec max, 50% load required on V1
[5] Isolated output
[6] The US100 series allows very fast *flexible* modified standard design changes within these parameters without non-recurring engineering charges and while retaining safety agency approvals. For medical models (US100M Series), maximum output voltage for V1, V2, V3 and V4 is ±24V. Please contact the factory for details.
[7] Can be specified in 0.1V increments
[8] Can be specified in 0.75V increments
[9] Operational extremes per safety agency testing

Specifications

Specifications are typical at 25ºC unless otherwise designated

Parameter	Limits
Input	
Input Voltage Range	90-250Vac rated (US100, US100B Series) 90-240Vac rated (US100M Series) 81-265Vac operation[9]
Input Frequency	47 to 63Hz
Input Operating Current	2.4A rms @ 90Vac input, 100W output
Input Surge Current	25A max, cold start @ 25ºC, 250Vac
Efficiency	75% typ @ 115Vac input, full power
Output	
Output Power	70W, natural convection cooling 100W with 28CFM forced air cooling 120W peak
Line Regulation	±0.2%, V_{in} (min) to V_{in} (max)
Load Regulation	±3% (V1, 20% to 100% I_m) ±5% (V2, V3, V4, 20% to 100% I_m)
Cross Regulation	±0.5% (V1, 20% to 100% I_m on V2-V4) ±5% (V2, V3, V4, 50% to 100% I_m on V1)
Noise and Ripple	25mV max RMS, 100mV max P-P, on V1=5.0V with full load 0.5% max RMS, 1% max P-P, on V2,V3 & V4 with full load

Parameter	Limits
Output *(cont'd.)*	
Power-up Overshoot	5% max, all outputs
Transient Response	V1, for 25% to 75% I_m change, 5% max deviation with recovery to 1% within 500µS
Hold-up Time	6mS min @ 115Vac input, 100W output
Overvoltage Protection Threshold	130% typical of Vout, all outputs
Power Limit Point	120% typical of max rated power
Environmental	
Operating Temperature Range (full power)	0°C to +50°C
Operating Temperature Range (extended range)	0°C to +70°C Derate linearly from full power at +50°C to half power at +70°C
Storage Temperature Range	-25°C to +85°C
Relative Humidity Range	5% to 95%, non-condensing
Vibration	0.75G peak, 5Hz to 500Hz. Test three orthogonal axis at 1 octave/min, 5 min dwell at four major resonances
MTBF	160,000 hours typical calculated per MIL STD 217 F at 30°C ambient
Weight	0.9 lb. (0.41 kg)

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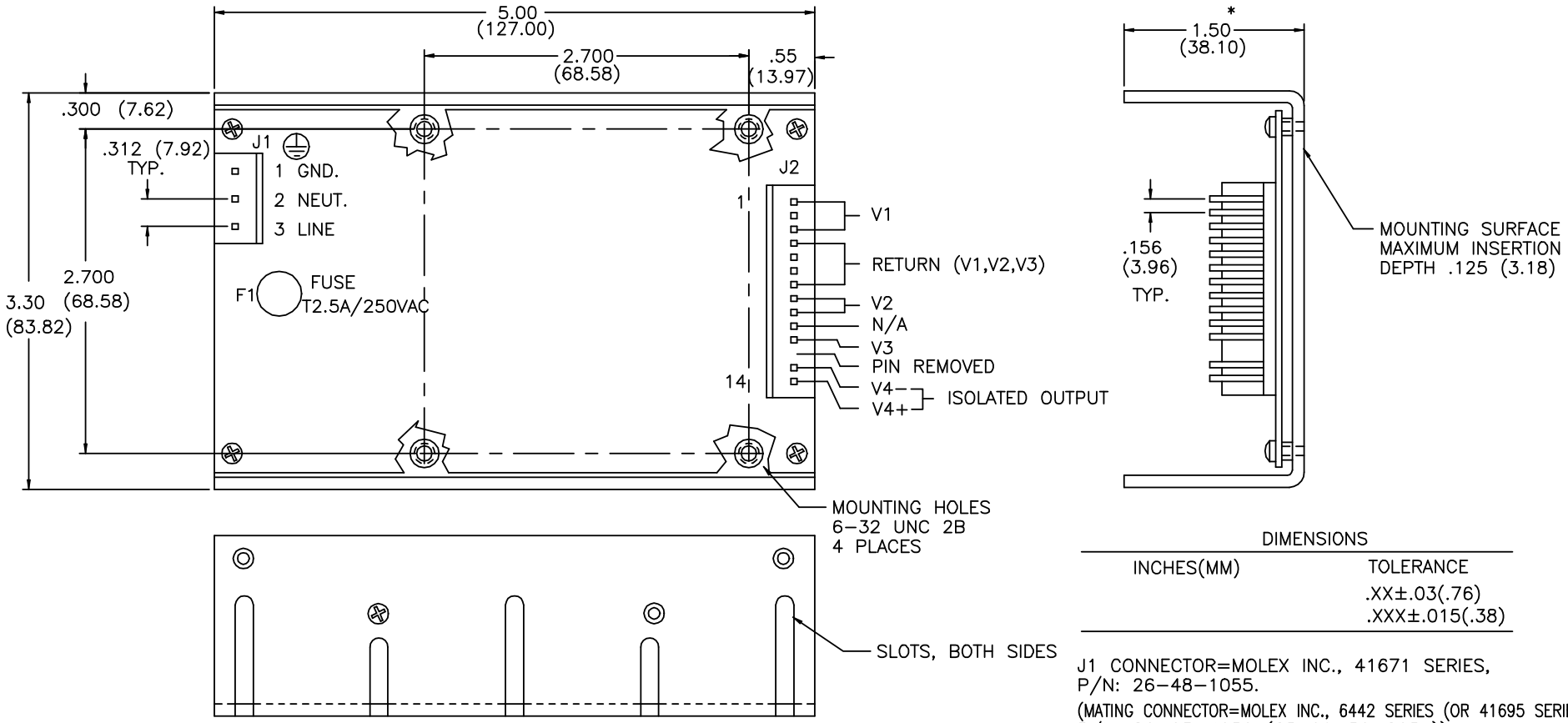

DIMENSIONS	
INCHES(MM)	TOLERANCE
	.XX±.03(.76)
	.XXX±.015(.38)

J1 CONNECTOR=MOLEX INC., 41671 SERIES,
P/N: 26−48−1055.

(MATING CONNECTOR=MOLEX INC., 6442 SERIES (OR 41695 SERIES),
P/N: 26−03−4050 (OR 09−50−8051))

J2 CONNECTOR=MOLEX INC., 41671 SERIES,
P/N: 26−48−1145.

(MATING CONNECTOR=MOLEX INC., 6442 SERIES (OR 41695 SERIES),
P/N: 26−03−4141 (OR 09−50−8141))

(MATING CRIMP TERMINALS=MOLEX INC., 6838 SERIES,
P/N: 08−52−0113 OR 08−52−0112)

US100_DS_REV1.DWG

* OPTIONAL COVER ADDS 0.035 (.89) TO HEIGHT.